

CLAIMS

What is claimed is:

- 5 1. In a computerized device, a method for obtaining content from a
content-originating device, the method comprising the steps of:
- identifying a location-path having a series of locations which leads from
the computerized device to the content-originating device, wherein each location
includes a set of devices, and wherein the set of devices of at least one location
10 includes multiple devices;
- selecting a device-path from the computerized device to the
content-originating device based on the identified location-path, wherein the
selected device-path includes at least one device of each location of the series of
locations; and
- 15 acquiring the content from the content-originating device from at least one
of the devices along the selected device-path.
2. The method of claim 1 wherein the content-originating device is configured to
operate as a content server for a first host domain; wherein a tree data structure,
20 which defines a content distribution layout having an inverted-tree shape, is
associated with a second host domain for distribution of content from the second
host domain; and wherein the step of identifying the location-path includes the
steps of:
- associating the tree data structure, which defines the content distribution
25 layout having the inverted-tree shape, with the first host domain; and
- ascertaining the location-path having the series of locations which leads
from the computerized device to the content-originating device based on the tree
data structure.

3. The method of claim 2 wherein the set of devices of each location along the series of locations which leads from the computerized device to the content-originating device provides multiple possible device-paths from the computerized device to the content-originating device, and wherein the step of selecting the device-path includes the step of:
- 5 choosing a device of each location to construct, as the device-path, a particular one of the multiple possible device-paths from the computerized device to the content-originating device.
- 10 4. The method of claim 1 wherein a location of the series of locations which leads from the computerized device to the content-originating device includes a set of devices that includes the computerized device and a tree former leader device, and wherein the step of identifying the location-path includes the steps of:
- 15 sending a location-path request message from the computerized device to the tree former leader device; and
- receiving, from the tree former leader device, a reply message which defines the location-path having the series of locations which leads from the computerized device to the content-originating device.
- 20 5. The method of claim 1 wherein a location of the series of locations which leads from the computerized device to the content-originating device includes a set of devices that includes the computerized device and a content fetching leader device, wherein the selected device-path includes the content fetching leader device, and wherein the step of acquiring the content includes the steps of:
- 25 sending a content request message from the computerized device to the content fetching leader device; and
- receiving, in response to the content request message, the content from the content fetching leader device.

6. The method of claim 1 wherein the step of selecting the device-path includes the steps of:

forming an ordered list of devices, wherein each device of the ordered list belongs to the series of locations which leads from the computerized device to the content-originating device; and
deriving the device-path based on the formed ordered list of devices.

7. The method of claim 6 wherein the content is a live feed, and wherein the step of deriving the device-path includes the steps of:

probing each device on the formed ordered list for responses; and
constructing the device-path based on the responses.

8. The method of claim 6 wherein the content is pre-positioned material, and wherein the step of deriving the device-path includes the steps of:

requesting the content from a first device in the formed ordered list; and
re-requesting the content from another device in the formed ordered list if the computerized device does not receive the content from the first device in the formed ordered list.

9. A computerized device for obtaining content from a content-originating device, comprising:

a network interface; and

a controller coupled to the network interface, the controller being

5 configured to:

- (i) identify a location-path having a series of locations which leads from the computerized device to the content-originating device, wherein each location includes a set of devices, and wherein the set of devices of at least one location includes multiple devices,
- 10 (ii) select a device-path from the computerized device to the content-originating device based on the identified location-path, wherein the selected device-path includes at least one device of each location of the series of locations, and
- 15 (iii) acquire the content from the content-originating device from at least one of the devices along the selected device-path through the network interface.

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10. The computerized device of claim 9 wherein the content-originating device is configured to operate as a content server for a first host domain; wherein a tree data structure, which defines a content distribution layout having an inverted-tree shape, is associated with a second host domain for distribution of content from the second host domain; and wherein the controller, in order to identify the location-path, is configured to:
- 5 associate the tree data structure, which defines the content distribution layout having the inverted-tree shape, with the first host domain; and
- ascertain the location-path having the series of locations which leads from the computerized device to the content-originating device based on the tree data structure.
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11. The computerized device of claim 10 wherein the set of devices of each location along the series of locations which leads from the computerized device to the content-originating device provides multiple possible device-paths from the computerized device to the content-originating device, and wherein the controller, in order to select the device-path, is configured to:
- 15 choose a device of each location to construct, as the device-path, a particular one of the multiple possible device-paths from the computerized device to the content-originating device.
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12. The computerized device of claim 9 wherein a location of the series of locations which leads from the computerized device to the content-originating device includes a set of devices that includes the computerized device and a tree former leader device, and wherein the controller, in order to identify the location-path, is configured to:
- 5 send a location-path request message from the computerized device to the tree former leader device; and
- receive, from the tree former leader device, a reply message which defines the location-path having the series of locations which leads from the computerized
- 10 device to the content-originating device.
13. The computerized device of claim 9 wherein a location of the series of locations which leads from the computerized device to the content-originating device includes a set of devices that includes the computerized device and a content
- 15 fetching leader device, wherein the selected device-path includes the content fetching leader device, and wherein the controller, in order to acquire the content, is configured to:
- send a content request message from the computerized device to the content fetching leader device; and
- 20 receive, in response to the content request message, the content from the content fetching leader device.
14. The computerized device of claim 9 wherein the controller, in order to select device-path, is configured to:
- 25 form an ordered list of devices, wherein each device of the ordered list belongs to the series of locations which leads from the computerized device to the content-originating device; and
- derive the device-path from the formed ordered list of devices.

15. The computerized device of claim 14 wherein the content is a live feed, and wherein the controller, in order to derive the device-path, is configured to:
- probe each device on the formed ordered list for responses; and
 - construct the device-path based on the responses.

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16. The computerized device of claim 14 wherein the content is pre-positioned material, and wherein the controller, in order to derive the device-path, is configured to:
- request the content from a first device in the formed ordered list; and
 - re-request the content from another device in the formed ordered list if the
- 10 computerized device does not receive the content from the first device in the formed ordered list.

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17. A set of computerized devices for obtaining content from a content-originating device, comprising:

a first computerized device which is configured as a tree forming leader;

a second computerized device which is coupled to the first computerized

5 device, the second computerized device being configured to:

(i) obtain, from the first computerized device which is configured as a tree forming leader, a communications signal that identifies a location-path having a series of locations which leads from the second computerized device to the content-originating device, wherein each location includes a set of devices, and wherein the set of devices of at least one location includes multiple devices,

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(ii) select a device-path from the second computerized device to the content-originating device based on the identified location-path, wherein the selected device-path includes at least one device of each location of the series of locations, and

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(iii) acquire the content from the content-originating device from at least one of the devices along the selected device-path.

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18. The set of computerized devices of claim 17, further comprising:

a third computerized device coupled to the second computerized device;

wherein the third computerized device is configured as a content fetching leader;

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and wherein the second computerized device, in order to acquire the content from the content-originating device, is configured to obtain the content through the third computerized device which is configured as the content fetching leader.

19. A set of computerized devices for obtaining content from a content-originating device, comprising:

a first computerized device which is configured as a content fetching leader;

- 5 a second computerized device which is coupled to the first computerized device, the second computerized device being configured to:

- 10 (i) identify a location-path having a series of locations which leads from the second computerized device to the content-originating device, wherein each location includes a set of devices, and wherein the set of devices of at least one location includes multiple devices,
- 15 (ii) select a device-path from the second computerized device to the content-originating device based on the identified location-path, wherein the selected device-path includes at least one device of each location of the series of locations, and
- 20 (iii) acquire the content from the content-originating device through the first computerized device which is configured as the content fetching leader.

20. A computerized device for obtaining content from a content-originating device, comprising:

a network interface; and

a controller coupled to the network interface, the controller including:

- 5 (i) means for identifying a location-path having a series of locations which leads from the computerized device to the content-originating device, wherein each location includes a set of devices, and wherein the set of devices of at least one location includes multiple devices,
- 10 (ii) means for selecting a device-path from the computerized device to the content-originating device based on the identified location-path, wherein the selected device-path includes at least one device of each location of the series of locations, and
- 15 (iii) means for acquiring the content from the content-originating device from at least one of the devices along the selected device-path through the network interface.
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21. A computer program product that includes a computer readable medium having instructions stored thereon for directing a computerized to obtain content from a content-originating device, such that the instructions, when carried out by the computerized device, cause the computerized device to perform the steps of:

5 identifying a location-path having a series of locations which leads from the computerized device to the content-originating device, wherein each location includes a set of devices, and wherein the set of devices of at least one location includes multiple devices;

10 selecting a device-path from the computerized device to the content-originating device based on the identified location-path, wherein the selected device-path includes at least one device of each location of the series of locations; and

 acquiring the content from the content-originating device from at least one of the devices along the selected device-path.

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